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10/593,086

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Kei Sakagami

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EXAMINER

MONIKANG, GEORGE C

ART UNIT

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2615

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,086	<b>Applicant(s)</b> SAKAGAMI, KEI	
	<b>Examiner</b> GEORGE C. MONIKANG	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/593,086.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/15/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-4, 6 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al, US Patent Pub. 2004/0062402 A1, in view of Tatsuta et al, US Patent 7,292,697 B2.

Re Claim 1, Fujita et al discloses a stereophonic sound reproducing system comprising: a stereophonic sound reproducing apparatus for providing a sound field space having the realism of a live performance to the listener by amplifying a plurality of input stereophonic sound signals by speakers corresponding to the stereophonic sound signals (*fig. 1: 7-1 through 7-6; 8-1 through 8-8; abstract*); at least a pair of right and left main speakers installed forward of the listening position (*fig. 1: 8-1 through 8-2*) and amplifying main signals as stereophonic sound signals corresponding to the speakers

(*fig. 1: 7-1 through 7-2*); and an integral surround speaker obtained by integrally forming a left surround speaker for generating the stereophonic sound by amplifying a surround signal as a stereophonic sound signal of a left-side component with respect to the listening position as a reference (*fig. 6; para 0120*), and a right surround speaker for generating the stereophonic sound by amplifying a surround signal as the stereophonic sound signal of a right-side component with respect to the listening position as a reference (*fig. 8; para 0120*), wherein the stereophonic sound reproducing apparatus comprises: a signal adjusting device, in the case where the integral surround speaker is installed in a position that makes arrangement asymmetrical with respect to the listening position as a center (*fig. 8; para 0120*) and installing frequency characteristics on the basis of a transfer function for creating a sound image in a predetermined listening position (*para 0122*); but fails to disclose adjusting the frequency characteristic of a surround signal of a component of the side different from the side on which the integral surround speaker is deviated; an adding device which adds a component of at least part of the adjusted surround signal to a main signal of the component on the same side as that of the adjusted surround signal; and an output device which outputs the resultant main signal to the corresponding main speaker and outputs at least part of the surround signal whose frequency characteristic is adjusted to the corresponding surround speaker. However, Tatsuta et al discloses adjusting a front-left channel side signal different from a front-right channel side signal and an adder to add the adjusted signals and an output device (*Tatsuta et al, fig. 11: SPL through SPsw; col. 11, lines 43-48*).

Taking the combined teachings of Fujita et al and Tatsuta et al as a whole, one skilled in the art would have found it obvious to modify the stereophonic sound reproducing system comprising: a stereophonic sound reproducing apparatus for providing a sound field space having the realism of a live performance to the listener by amplifying a plurality of input stereophonic sound signals by speakers corresponding to the stereophonic sound signals (fig. 1: 7-1 through 7-6; 8-1 through 8-8; abstract); at least a pair of right and left main speakers installed forward of the listening position (fig. 1: 8-1 through 8-2) and amplifying main signals as stereophonic sound signals corresponding to the speakers (fig. 1: 7-1 through 7-2); and an integral surround speaker obtained by integrally forming a left surround speaker for generating the stereophonic sound by amplifying a surround signal as a stereophonic sound signal of a left-side component with respect to the listening position as a reference (fig. 6: para 0120), and a right surround speaker for generating the stereophonic sound by amplifying a surround signal as the stereophonic sound signal of a right-side component with respect to the listening position as a reference (fig. 8: para 0120), wherein the stereophonic sound reproducing apparatus comprises: a signal adjusting device, in the case where the integral surround speaker is installed in a position that makes arrangement asymmetrical with respect to the listening position as a center (fig. 8: para 0120) and installing frequency characteristics on the basis of a transfer function for creating a sound image in a predetermined listening position (para 0122) of Fujita et al with adjusting a front-left channel side signal different from a front-right channel side signal and an adder to add the adjusted signals and an output device (Tatsuta et al, fig.

11: SPL through SPsw; col. 11, lines 43-48) as taught in Tatsuta et al to create a better overall sound.

Re Claim 2, the combined teachings of Fujita et al and Tatsuta et al disclose the stereophonic sound reproducing system according to claim 1, wherein the signal adjusting device adjusts a frequency characteristic of each of surround signals of right-side and left-side components (Tatsuta et al, col. 11, lines 43-48) by using the transfer function every right-side and left-side component (Fujita et al, para 0122).

Re Claim 3, the combined teachings of Fujita et al and Tatsuta et al disclose the stereophonic sound reproducing system according to claim 1, wherein the signal adjusting device adjusts a frequency characteristic of a surround signal (Tatsuta et al, col. 11, lines 43-48) by using a head-related transfer function (HRTF) as the transfer function for generating a sound image in a listening position in a predetermined space (Fujita et al, para 0122).

Claim 4 has been analyzed and rejected according to claim 3.

Re Claim 6, the combined teachings of Fujita et al and Tatsuta et al disclose the stereophonic sound reproducing system according to claim 1, wherein the integral speaker system is installed on a side of a listening position (Fujita et al, fig. 6; para 0120).

Claim 10 has been analyzed and rejected according to claim 1.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al, US Patent Pub. 2004/0062402 A1 and Tatsuta et al, US Patent 7,292,697 B2, as applied to claim 1 above, in view of Serikawa et al, US Patent 5,796,845.

Re Claim 5, the combined teachings of Fujita et al and Tatsuta et al disclose the stereophonic sound reproducing system according to claim 1, but fails to disclose an adding device multiplies the adjusted surround signal with a predetermined coefficient and adding the resultant surround signal to the main signal. However, Serikawa et al does (*col. 22, line 46 through col. 23, line 12*).

Taking the combined teachings of Fujita et al, Tatsuta et al and Serikawa et al as a whole, one skilled in the art would have found it obvious to modify the stereophonic sound reproducing system of Fujita et al and Tatsuta et al with an adding device multiplies the adjusted surround signal with a predetermined coefficient and adding the resultant surround signal to the main signal as taught in Serikawa et al (*col. 22, line 46 through col. 23, line 12*) for more increased presence.

5. Claims 7-9 & 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al, US Patent Pub. 2004/0062402 A1, in view of Makino, US Patent 6,862,356 B1, and further in view of Klayman et al, US Patent 7,043,031 B2.

Re Claim 7, Fujita et al discloses a stereophonic sound reproducing system comprising: a stereophonic sound reproducing apparatus for providing a sound field space having the realism of a live performance to the listener by amplifying a plurality of input stereophonic sound signals by speakers corresponding to the stereophonic sound

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signals (fig. 1: 7-1 through 7-6; 8-1 through 8-8; abstract); at least a pair of right and left main speakers installed forward of the listening position (fig. 1: 8-1 through 8-2) and amplifying main signals as stereophonic sound signals corresponding to the speakers (fig. 1: 7-1 through 7-2); and an integral surround speaker obtained by integrally forming a left surround speaker for generating the stereophonic sound by amplifying a surround signal as a stereophonic sound signal of a left-side component with respect to the listening position as a reference (fig. 6; para 0120), and a right surround speaker for generating the stereophonic sound by amplifying a surround signal as the stereophonic sound signal of a right-side component with respect to the listening position as a reference (fig. 8; para 0120); but fails to disclose wherein the stereophonic sound reproducing apparatus comprises: a generating device, in the case where the integral surround speaker is installed in a position that makes arrangement asymmetrical with respect to the listening position as a center (Makino, col. 1, lines 21-30). The combined teachings of Fujita et al and Makino fail to disclose generating a differential signal by subtracting a surround signal of a component on the side on which surround speaker is deviated and installed from a surround signal of a component of the side different from the side on which the surround speaker is deviated and installed (Klayman et al, col. 6, lines 14-26); a first computing device which performs computing process of adding the generated differential signal to the surround signal of the component on the side different from the side on which the integral surround speaker is deviated and installed (Klayman et al, col. 6, lines 14-26; fig. 5: 142); a second computing device which performs computing process of subtracting the generated differential signal from the

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surround signal of the component on the same side as the side on which the surround speaker is deviated and installed (Klayman et al, col. 6, lines 14-26); an adding device with adds at least part of each of the surround signals subjected to the computing process to a main signal of a component on the same side (Klayman et al, col. 6, lines 14-26; fig. 5: 142); and an output device which outputs the resultant main signal to the corresponding main speaker and outputs at least part of the surround signal subjected to the differential signal computing process to the corresponding surround speaker (Klayman et al, col. 6, lines 14-26; fig. 5: 142). However, Klayman et al does.

Taking the combined teachings of Fujita et al, Makino and Klayman et al as a whole, ones skilled in the art would have found it obvious to modify the stereophonic sound reproducing system comprising: a stereophonic sound reproducing apparatus for providing a sound field space having the realism of a live performance to the listener by amplifying a plurality of input stereophonic sound signals by speakers corresponding to the stereophonic sound signals (fig. 1: 7-1 through 7-6; 8-1 through 8-8; abstract); at least a pair of right and left main speakers installed forward of the listening position (fig. 1: 8-1 through 8-2) and amplifying main signals as stereophonic sound signals corresponding to the speakers (fig. 1: 7-1 through 7-2); and an integral surround speaker obtained by integrally forming a left surround speaker for generating the stereophonic sound by amplifying a surround signal as a stereophonic sound signal of a left-side component with respect to the listening position as a reference (fig. 6: para 0120), and a right surround speaker for generating the stereophonic sound by amplifying a surround signal as the stereophonic sound signal of a right-side component

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with respect to the listening position as a reference (fig. 8; para 0120) of Fujita et al with the stereophonic sound reproducing apparatus comprises: a generating device, in the case where the integral surround speaker is installed in a position that makes arrangement asymmetrical with respect to the listening position as a center as taught in Makino (Makino, col. 1, lines 21-30) so that the center sound image is delocalized to a position closer to the speaker disposed closer to the listener with generating a differential signal by subtracting a surround signal of a component on the side on which surround speaker is deviated and installed from a surround signal of a component of the side different from the side on which the surround speaker is deviated and installed (Klayman et al, col. 6, lines 14-26); a first computing device which performs computing process of adding the generated differential signal to the surround signal of the component on the side different from the side on which the integral surround speaker is deviated and installed (Klayman et al, col. 6, lines 14-26; fig. 5: 142); a second computing device which performs computing process of subtracting the generated differential signal from the surround signal of the component on the same side as the side on which the surround speaker is deviated and installed (Klayman et al, col. 6, lines 14-26); an adding device with adds at least part of each of the surround signals subjected to the computing process to a main signal of a component on the same side (Klayman et al, col. 6, lines 14-26; fig. 5: 142); and an output device which outputs the resultant main signal to the corresponding main speaker and outputs at least part of the surround signal subjected to the differential signal computing process to the corresponding surround speaker (Klayman et al, col. 6, lines 14-26; fig. 5: 142) as

taught in Klayman et al to spatially enhance the sound signals and broaden the sound image.

Claims 8, 9 & 11-13 have been analyzed and rejected according to claim 7.

### **Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GEORGE C. MONIKANG whose telephone number is (571)270-1190. The examiner can normally be reached on M-F. alt Fri. Off 7:30am-5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 2615

/Vivian Chin/

Supervisory Patent Examiner, Art Unit 2615